

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**APPLICATION FOR LETTERS PATENT**

**Inventor:** Anthony M. Iannelli of Cincinnati, Ohio

**Title of the Invention:** Roof Gutter Cover Section With Water Draining Upper Surface

**Attorney Docket No.** US-0204-I

## **Background of the Invention**

The present invention relates to covers or shields adapted to be mounted over a roof gutter to keep out leaves and other debris, and more particularly to gutter covers that channel or drain the rainwater into the gutter principally through their upper surfaces.

In the past, typical gutter covers have been formed with a substantially imperforate upper surface or top portion and with a relatively deep, water-channeling trough located near the area where the cover is attached to the front lip of the gutter. This arrangement was believed to provide the most durability, leaf-shedding ability and pleasing appearance. However, the imperforate top, deep trough gutter cover was somewhat limited in its versatility. Likewise, the water-channeling trough tended to require a relatively elevated front wall that, in turn, occasionally resulted in difficulty mounting the rear portion of the gutter cover on the roof structure without changing the position of the gutter. As a result of these limitations, installing these conventional gutter covers could be relatively laborious or even impossible in the case of older structures such as half-round or box-style gutters. It is also believed that there is a need in the industry for a gutter cover that is less expensive to produce and install than the aforementioned conventional cover. Thus, the present inventor was faced with the problems of devising a more versatile and

less expensive gutter cover than those currently marketed.

### **Summary of the Invention**

The present invention is a cover section for a roof gutter and is fashioned to extend longitudinally in overlying relation to a length of the gutter. The present cover section basically comprises a top portion extending forwardly from a rear edge of the cover section, a front wall extending generally downwardly from the top portion, a ledge extending generally horizontally from a lower section of the front wall, one or more longitudinally extending ridges formed in the top portion, and a plurality of apertures extending through the top portion and disposed in front of and behind the longitudinally extending ridge or ridges.

### **Brief Description of the Drawings**

FIG. 1 is a fragmentary top plan view of a lower portion of a roof with a gutter and a gutter cover section according to the present invention mounted thereon;

FIG. 2 is an enlarged sectional view taken along line 2-2 of FIG. 1 and particularly illustrates one of the preferred embodiments of the present gutter cover;

FIG. 3 is a further enlarged fragmentary sectional view of the area

generally designated 3 in FIG. 2;

FIG. 4 is an enlarged fragmentary sectional view similar to FIG. 3 and illustrates a second embodiment of the present invention;

FIG. 5 is an enlarged, fragmentary sectional view similar to FIG. 4 and illustrates a third embodiment of the present invention;

FIG. 6 is an enlarged, fragmentary sectional view similar to FIG. 5 and illustrates a fourth embodiment of the present invention; and

FIG. 7 is an enlarged, fragmentary sectional view similar to FIG. 6 and illustrates a fifth embodiment of the present invention.

### **Detailed Description of the Preferred Embodiments**

As indicated in FIGS. 1 and 2, the present invention is a cover section, generally designated 10, for a roof gutter 18 and is fashioned to extend longitudinally in overlying relation to a length of the gutter 18. The present gutter cover section 10 basically comprises a top portion 12 extending forwardly from a rear edge 24 of said cover section 10, a front wall 13 extending generally downwardly from the top portion 12, a ledge 14 extending generally horizontally from a lower section 13B of the front wall 13, at least one longitudinally extending ridge 20 formed in the top portion 12, and a plurality of apertures 22 extending through the top portion 12 and disposed in front of and behind the at least one

longitudinally extending ridge 20.

As further illustrated in FIGS. 1 and 2, the present gutter cover section 10 is preferably integrally and unitarily formed from a single sheet of aluminum alloy that is relatively thin (i.e., within the range of 0.016-0.032 inch thick) and that is within the ranges of 43-61 inches long and 10-18 inches wide. The top portion 12 is advantageously provided with an under turned or hemmed rear edge 24 and with clipped rear edge corners 26. In this manner, the chances of installers being cut by the rear edge 24 or corners 26 is reduced, and the chances of the rear edge 24 or corners 26 getting caught or causing damage as they are inserted under roof shingles 28 is reduced.

As further illustrated in FIGS. 1 and 2, the top portion 12 is preferably formed with a longitudinally extending, imperforate rear section 30 which extends forwardly from the hemmed rear edge 24 approximately 3-10 inches. Advantageously, the rear section 30 is bendable and, due to the relatively low profile of the present gutter cover 10 as explained in further detail below, the rear section 30 may be mounted on a fascia member 32 disposed behind the gutter 18, or under any of the first several horizontal rows 28 of shingles, as shown. In this manner, the present gutter cover 10 is believed to be easier to install and more versatile in terms of being suitable for use with half-round and box

gutters, or mounted to the fascia 32 for slate, tile or flat roof installations.

As further illustrated in FIGS. 1 and 2, the top portion 12 of the present gutter cover 10 preferably includes a midsection 38. As illustrated, the midsection 38 is longitudinally coextensive with the gutter cover section 10 and has a width of approximately 3-10 inches extending forwardly from a front boundary of the rear section 30. Preferably, a pair of longitudinally extending, spaced apart, upwardly projecting ridges 20 are formed on the midsection 38, and a plurality of generally equally spaced apart openings 22A, 22C, 22B extend through the midsection 38 in front of, behind and in between the ridges 20. The ridges 20 are intended to slow and dam rainwater flowing onto the gutter cover section 10 and to add strength to the top portion 12 of the gutter cover 10. The openings 22A-C drain the rainwater into the gutter 18 there below and are preferably 0.120 inch in diameter. It is believed that the drainage of rainwater into the gutter 18 is restricted by smaller diameter openings and that larger diameter openings tend to collect or trap debris on the top portion 12.

The top portion 12 is also preferably formed with a longitudinally coextensive front section 40 disposed between the midsection 38 and the wall portion 13A, 13B. The front section 40 is advantageously imperforate, planar, and generally horizontally disposed.

As illustrated in FIGS. 2 and 3, the front wall 13 preferably includes a curved nose or inclined ramp 42 extending forwardly and downwardly from the front section 40 of the top portion 12. A lower section 13B of the front wall 13 preferably includes a splashguard 15 extending downwardly and inwardly a distance within a range of 0.25-0.75 inch, and then upwardly and outwardly into the generally horizontal ledge 14. Advantageously, the splashguard 15 is provided with several ports 44 through which rainwater drains into the gutter 18.

As illustrated in FIG. 3, the horizontal ledge 14 is preferably provided with a plurality of weep holes 46 and with an upturned lip 48 to keep rainwater from dripping off of the ledge. A return gutter lip-mounting surface 50 preferably extends rearwardly from a lower end of the ledge lip 48 a distance slightly greater than the width of the gutter lip 16 and terminates in a downwardly and forwardly curved, gutter lip-engaging end flange 51. A space 52 is advantageously provided between the ledge 14 and the gutter lip-mounting surface 50 through which rainwater reaches the gutter 18. Preferably, the ledge 14 is secured to the gutter lip 16 by zip screws 54 or other fasteners. Additional cover sections (not shown) are installed in substantially the same manner as described above to completely cover the gutter 18.

As further illustrated in FIG. 3, it is preferable for the front

wall 13 to be relatively short so that a vertical distance  $d$  from an upper end 17 of the front wall 13 to the generally horizontal ledge 14 is equal to or less than 1.5 inches. It is believed that by keeping the distance  $d$  relatively small, the versatility of the present gutter cover 10 is enhanced, both in terms of its adaptability to gutters of various shapes and sizes and in terms of its ability to be mounted at various heights and locations to accommodate the existing gutter structure. In addition, the low profile appearance created by keeping the distance  $d$  relatively small is believed to add aesthetic appeal to the present gutter cover section 10, once installed.

FIG. 4 illustrates a second embodiment, generally designated 100, of the present gutter cover. The top portion 12 of the present embodiment 100 is substantially the same as the top portion 12 of the first embodiment 10 illustrated in FIGS. 1-3, so the components of the top portions 12 of the first and second embodiments have been identified with the same reference numbers. The lower section 113B of the front wall, however, does not include a splashguard, but instead turns forwardly at approximately a right angle into the horizontal ledge 114. The ledge 114 is formed with several weep holes 146 and with a raised lip 148. A gutter lip-mounting return surface 150 extends rearwardly from a lower end of the ledge lip 148, and a space 152 is provided between the

ported ledge 14 and the gutter lip-mounting surface 150. A free end of the mounting surface 150 is formed with a first gutter lip-engaging portion 154A projecting downwardly at approximately a right angle to the mounting surface 150, and with a second gutter-engaging portion 154B projecting downwardly and inwardly in a curve which is adapted to engage the lip of a half-round gutter (not shown).

FIG. 5 illustrates a third embodiment 200 of the present invention. As can be seen, the ridge 220 in the top section 212 preferably has a flat peak, and the front section 240 extends forwardly further than the front sections 40 of the first and second embodiments 10, 100. The front wall 213 includes a nose portion 242 that is preferably the same as the nose portions 42 of the first and second embodiments 10, 100. The front wall 213 is preferably vertically aligned with an upper front corner 56 of the gutter 18, and the lower section 213B turns rearwardly at approximately a right angle into the ledge 214. The horizontal ledge 214 extends rearwardly a distance slightly greater than the width of the gutter lip 16 and is preferably formed with a downwardly and forwardly curved end flange 251.

FIG. 6 illustrates a fourth embodiment 300 of the present invention. The front, generally horizontal section 340 of the top 312 extends forwardly slightly further than the front portion 240 of the previous

embodiment 200 illustrated in FIG. 5. In this manner, the lower portion 313B of the front wall extends downwardly below and in front of the horizontal ledge 314, preferably by 0.25-0.75 inch. A return bend 357 connects the lower portion 313B of the front wall to the rearwardly extending ledge 314. A downwardly and forwardly curved end flange 351 is also provided. The return bend 357, the ledge 314 and the end flange 351 are preferably sized and positioned to be resiliently mounted on the gutter lip 16.

FIG. 7 illustrates a fifth embodiment 400 of the present invention. The lower portion 313B of the front wall extends downwardly below and in front of the horizontal ledge 414, preferably by 0.25-0.50 inch. A return bend 457 connects the lower portion 413B to the rearwardly extending ledge 414. The ledge 414, however, extends rearwardly only partially over the gutter lip 16, and a zip screw 454 or other fastener secures the lower portion 413B of the front wall and the return bend 457 to the gutter 18.

While several embodiments of the present gutter cover section have been illustrated and described in substantial detail, the foregoing disclosures are not intended to limit the spirit of the invention or the scope of the following claims.